

Order 1748



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

RBSC7048-P-11
Job Sheet 172194



Part No: RBSC7048-P-11

Job Qty: 5 ea

Part Name: Stud



Part Weight: 0 lbs

Status: Scheduled

Priority: Medium

Job Created: 2/13/18

Job Tracking No:

Due Date: 2/19/18

Created By: Marie Lajeunesse

Type: SOLD

Description:

Note: DWG RBSC7048-P-11 REV:6 IPP REV A 18.02.12 NEW ISSUE RQ VERIFIED BY DP

Ship Via:

Bill of Materials

Job Routing

Op No	Operation	Qty	Start Date	Due Date	Standard		Workcenter/Supplier		Sign-off
					Setup hrs	Run Hrs	Workcenter / Supplier	Lead Time	
90	Start up Operation	5 Ea		2/17/18	0.00	0.00	Start Up Machining-4		
120	CNC Lathe	5 pcs		2/19/18	0.00	1.67	MORI SL-154		
130	QC	5 pcs		2/19/18	0.00	0.00	QC2		
140	QC	5 pcs		2/19/18	0.00	0.00	QC8 Machining-2		
170	Outsource	5 pcs		2/19/18	0.00	0.00	Outsource12		
180	Packaging	5 pcs		2/19/18	0.00	0.00	Packaging2		
185	QC	5 pcs		2/19/18	0.00	0.00	QC6		
190	Packaging	5 pcs		2/19/18	0.00	0.00	Packaging3		
210	QC21-FG	5 Ea		2/19/18	0.00	0.00	QC21		

Part Op 120 - 1-Machine as per folio FB 896 FOLIO REV: _____ DWG REV: _____ 2-Debur
 Descriptions: 170 - Issue P/O to Groupe Altech; PO 029448 -Black oxide finish, MIL-C-13924C Class 1 -Certificate of
 Conformity is required
 180 - Receive

APR 05 2018

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Job BOM

Part / Item	Component Name	Quantity	Operation	Container
MT-4140QT-R0.625	AlSi 4140 Quenched & Tempered Steel Round Bar 0.625" Dia.	1.7500 ft (.35 ea)	90-Start up Operation	

Job Allocations

Operation	Component Part	Required	Inventory	Allocated
90-Start up Operation	MT-4140QT-R0.625	2	0	0

Part Specifications



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
CANADA
TEL.: 1 613 632-5200
Email: sales@dartaero.com
www.dartaerospace.com

ot be found.

Plex 2/13/18 1:35 PM Dart.lajeunesse.marie

Container No: S055794



Part: RBSC7048 - P - 11

Job No: 172194

Serial No/Batch: S055794

Revision: 6

Inspector:

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

DART AEROSPACE LTD		Work Order:	172194
Description: Stud		Part Number:	
Inspection Dwg: RDSC7048-P-11		Rev: 6	Page 1 of 1

INSPECTION SHEET

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø.500	+/- .005	.496	✓		Vern LPO9	
.435	+/- .001	.435			Mic LPO1	
4.000	+ .020 / - .010				Vern LPO9	
1.60	+/- .01	1.597			↓	
.83	+/- .01	.820			↓	
.311	+/- .001	.311			Mic LPO1	
.100	+/- .005	.098			Vern LPO9	
45°	+/- .5	45°			Protractor	
.680	+ .000 / - .020	.678			Vern LPO9	
.250	+ .000 / - .002	.249			Mic LPO1	
.88	+/- .01	.88			Vern LPO9	
5/16-24 UNF-2A						
Major .3078	+/- .0036	.307			Mic LPO1	
Wor .029						
DOW .3335	+/- .0019	.3325				
1/4-20 UNC-2A						
Major .2448	+/- .0041	.245				
Wor .029						
DOW .2583	+/- .0019	.2595			↓	

Measured by: P	Checked by: B.A	QC Inspector:
Date: 18-03-26	Date: 18-03-28	Date:

Engineering Approval: (If necessary)	Date:
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Rev	Date	Change	Revised by	Approved
A	14.07.31	New Issue	KJ	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

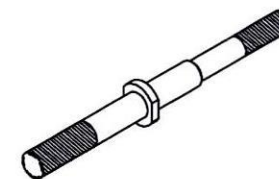
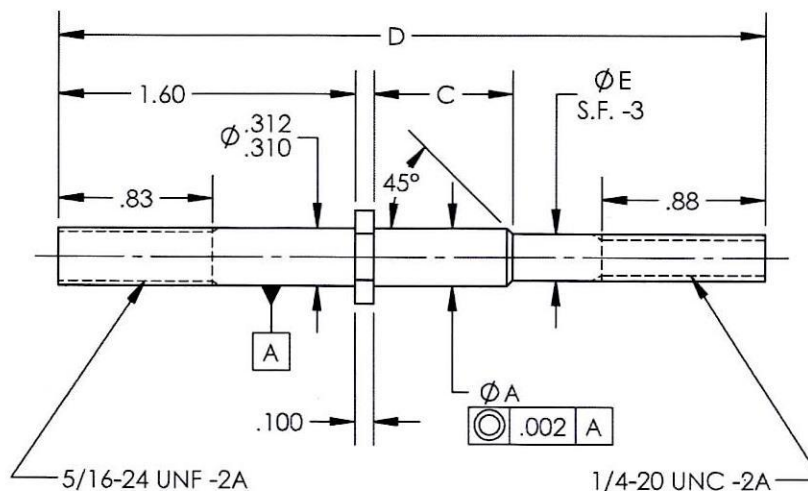
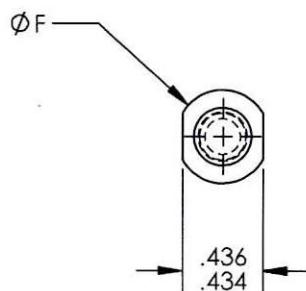
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐																																																																

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REVISIONS					
REV	ECR	DESCRIPTION	DATE	INITIAL	APPROVED
1		CHD TOOL # RBSC412-010-182-103-P TO RBSC7188-P TO CLARIFY TOOLING IDENTIFICATION.	11/6/09	WP	DW
2		ADDED NEW BRG. CUTTER RBSC7048-P FOR BEARING #406-312-100-101 PER E.B.	5/2/11	RJC	
3		CORRECTED -11 SCALE TO REFLECT PART REPRESENTATION PER S.E.	6/24/11	RJC	RW
6	16-0112	-11 CHD MAT'L WAS 4140 Q&T IS 4140/4142. ADDED HEAT TREAT AND SPEC. CHD DIMS WAS 1/4-20 MACHINE THREADS IS 1/4-20 UNC-2A, WAS 5/16-24 MACHINE THREADS IS 5/16-24 UNF-2A.	8/11/2016	DEW	SM



SHOP COPY
RETURN TO
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UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 172194 MCT
1802-13

(-11)

STUD

TOOL NUMBER	ØA +.000 -.002	B	C +.000 -.020	D +.020 -.010	E +.000 -.002	ØF
RBSC7008-P	.310	1/4-20 UNC	.750	3.875	.250	.500
RBSC7028-P	.310	1/4-20 UNC	.750	3.812	.250	.500
RBSC7048-P	.373	1/4-20 UNC	.680	4.000	.250	.500
RBSC7188-P	.310	1/4-20 UNC	.680	3.875	.250	.500

DART AEROSPACE	
TITLE RBSC7###-P SERIES PORTABLE BEARING CUTTERS FOR BELL BEARINGS	
DWG NO. RBSC7###-P-11	REV 6
MAT'L 4140/4142	UNLESS OTHERWISE SPECIFIED
HEAT TREAT RC 28-32	DIMENSIONS ARE IN INCHES
FINISH BLACK OXIDE	.XXX ± .005 FRACTIONS ± 1/8
SPEC QMSI-6.2.2, B.O. REV D	.XX ± .01 ANGLES ± 5°
	.X ± .1 SURFACES = 125/
DRAWN BY: MACKOVJAK	1. BREAK ALL SHARP EDGES .015 x 45° OR .015R
CHECKED: DUERFELDT	2. DIMENSIONAL LIMITS APPLY AFTER PLATING
OPPS APPR: ANDERSON	3. INTERPRET DIM AND TOL PER ASME Y14.5M-2009
QA APPR: LINDSAY	USED ON MODEL
APPROVED: GILBERT	
SCALE 1:1	DATE 7/13/2015
SHEET 7 OF 7	

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER :							
Misidentified ☐	Past Due ☐								



Dart Aerospace Ltd.
1270 Aberdeen St
Hawkesbury, ON
K6A 1K7
Canada

Tel (613) 632-5200

PURCHASE ORDER **PO039448**

Supplier: GRO002-VC
Group Altech
2455 Halpern
St Laurent
QC
H4S 1N9 Canada
Phone: 514-335-3666
Fax: 514-335-3868

PO No: PO039448
PO Date: 3/28/18
Due Date: 4/4/18
Purchase Order
Revision:
Revision Date:
Ship-To Contact: Phone:

Ship To: 1270 Aberdeen Street
Hawkesbury
ON
K6A 1K7 Canada
Phone: 613-632-5200

Via: Ground
Pymt Terms: Net 30
Freight Terms:
Special Comments:

Phone: 613-632-5230

				Items									
Line Item	Job	Part	Description	Status	Due Date	Order Quantity	Received Quantity	Balance	Unit Price (CAD)	Extended Price			
1	168854	RB6897875-1	Fuel Nozzle Holding Fixture Issue P/O to Groupe Altech; PO _____ -Black oxide finish, MIL-C-13924C Class 1 -Certificate of Conformity is required	Firmed	4/4/18	6 pcs	0 pcs	6 pcs	\$17.95/pcs	\$107.70			
						✓ 6x				AT 18/6/18			
2	172194	RBSC7048-P-11	Stud Issue P/O to Groupe Altech; PO _____ -Black oxide finish, MIL-C-13924C Class 1 -Certificate of Conformity is required	Firmed	4/4/18	5 pcs	0 pcs	5 pcs	\$1.45/pcs	\$7.25			
						✓ 5x				AT 18/6/18			
3	171742	RBT18520-9	Extension -Issue P/O to Groupe Altech; PO _____ -Black oxide finish, MIL-C-13924C Class 1 -Certificate of Conformity is required	Firmed	4/4/18	12 pcs	0 pcs	12 pcs	\$4.35/pcs	\$52.20			
						✓ 12x				AT 18/6/18			
4	172193	RBSC7048-P-1	Spring Tensioner Issue P/O to Groupe Altech; PO _____ -Black oxide finish, MIL-C-13924C Class 1 -Certificate of Conformity is required	Firmed	4/4/18	5 pcs	0 pcs	5 pcs	\$1.25/pcs	\$6.25			
						✓ 5x				AT 18/6/18			
Grand Total:										\$173.40			

Order Notes



Certificat de Conformité / Certificate of Compliance

(008024-1)

2455, Rue Halpern | Saint-Laurent | Québec | H4S 1N9
 Tel: 514-335-3666 Fax: 514-335-3868
 www.groupaltech.com

Bon de Livraison / Packing Slip

008024 - 1

Livré à / Ship to

DART AEROSPACE LTD
 1270 ABERDEEN STREET
 HAWKESBURY, ON, K6A1K7
 CANADA
 Tel.: 613-632-5200 Fax.:

Client / Customer:

DART AEROSPACE LTD
 1270 ABERDEEN STREET
 HAWKESBURY, ON, K6A1K7
 CANADA
 BUYER:

Date expédition Ship date		Créé Par Generated By	Transport / No de Compte Courrier / Acc. No.	Bon de commande Client Customer Purchase Order No.				
02-Apr-2018		Aman		PO039448				
#Ligne Line#	No. de Série / # Pièce Part Number /Line Item Details Job # / Ref #	Description pièce(s)	CATG. U/M	Comm. /Ordered	Exp/ Shipped	Qté NC/ NC Qty	Qté Scrap/	À venir/ Back Order
1	RB6897875-1 Rev.	RB6897875-1 01 -OXIDE BLACK [OXIDE BLACK]	OXIDE-BLACK CH	6	6	0	0	0
2	RBSC7048-P-11 Rev.	RBSC7048-P-11 01 -OXIDE BLACK [OXIDE BLACK]	BLACK-OXIDE CH	5	5	0	0	0
3	RBT18520-9 Rev.	RBT18520-9 01 -OXIDE BLACK [OXIDE BLACK]	OXIDE-BLACK CH	12	12	0	0	0
4	RBSC7048-P-1 Rev.	RBSC7048-P-1 01 -OXIDE BLACK [OXIDE BLACK]	BLACK-OXIDE CH	5	5	0	0	0

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Notes Additionnelles / Additional Notes

Epaisseur réelle
Actual Thickness

Inspecteur Qualité
Quality Inspector

Réçu par
Received By

Nous certifions que les pièces énumérées ci-dessus ont été traitées en conformité avec votre commande et vos spécifications et rencontrent les exigences.
 Notre responsabilité financière et légale ne sera pas supérieure au montant de la facture issue.

We hereby certify that the parts listed above have been process in accordance with your purchase order and specifications and are in conformance with your requirements.
 Our financial and legal responsibility will not be higher than the amount of invoice.